

## **Long Island Sound Integrated Coastal Observing System (LISICOS)**

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With more than eight million people living in its watershed, Long Island Sound (LIS) is the nation's preeminent urban estuary. LIS provides the region with natural resources, including oysters, clams, lobsters, and bluefish, and both commercial and sport fishing are important to the regional economy. Unfortunately, LIS has also served as the region's sewer, resulting in water quality degradation and critical habitat loss. Extensive wastewater treatment plant upgrades have been mandated to rectify these problems. The high concentration of development along the surrounding coastline has also prompted increased dredging for navigation, electric power transmission, and gas pipelines. The goal of the Long Island Sound Integrated Coastal Observing System is the development of a sustained capability to observe the Long Island Sound ecosystem and an adequate capability to understand and predict its response to natural and anthropogenic changes.

Major components of LISICOS will include:

- a coherent and sustained time-series observation program coupled with short periods of more intensive process studies,
- the development of a data center,
- development of forecast products for mariners and managers,
- development and assessment of models of oxygen and nutrient cycles, circulation, and water properties, and
- outreach programs to enhance of partnerships with State, Federal and local governments and citizens.

Accomplishments to Date:

- Deployment and maintenance of five buoys that monitor salinity, temperature, and dissolved oxygen throughout the sound,
- Three of the above buoys provide over-water meteorological observations. One includes a surface wave sensor, and one includes PAR and chlorophyll sensors,
- Development of a three-dimensional circulation model,
- Development and testing of a primary-production respiration model,
- Coupling of the circulation and ecosystem models, and
- Analysis of existing hydrography to infer exchange between LIS, the Hudson River, and the shelf waters.